

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA  
ALEXANDRIA DIVISION**

DIALECT, LLC,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civil Action No. 1:23-cv-581-DJN
	)	
AMAZON.COM, INC., et al.,	)	JURY TRIAL DEMANDED
	)	
Defendants.	)	
	)	

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**OPENING CLAIM CONSTRUCTION BRIEF OF AMAZON.COM, INC.**

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<b>Exhibit Number</b>	<b>Description</b>
1	Email from Justin Constant to Amazon's Counsel dated March 5, 2024
2	Xuedong Huang, Alex Acero, and Hsiao-Wuen Hon, SPOKEN LANGUAGE PROCESSING: A GUIDE TO THEORY, ALGORITHM, AND SYSTEM DEVELOPMENT (2001)
3	Dialect's Initial Proposed Claim Constructions dated February 15, 2024
4	IEEE100: THE AUTHORITATIVE DICTIONARY OF IEEE STANDARDS TERMS (7th ed. 2000)
5	James Allen, NATURAL LANGUAGE PROCESSING (2d ed. 1995)
6	Email from Donna Long to Amazon's Counsel dated March 13, 2024

<b>Docket Number</b>	<b>Asserted Patent</b>	<b>Asserted Claims</b>
1-2	U.S. Patent No. 7,693,720	1, 4, 14, 19, 31, 32
1-3	U.S. Patent No. 8,015,006	1, 2, 3, 5, 10, 11
1-5	U.S. Patent No. 8,195,468	19, 20, 28, 29, 30, 32
1-7	U.S. Patent No. 9,263,039	13, 14, 15, 16, 17, 18
1-8	U.S. Patent No. 9,495,957	1, 3, 4, 5, 7, 8

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<sup>1</sup> Exhibits 1-6 are attached to the Declaration of Donna Long filed concurrently herewith.

Defendants Amazon.com, Inc. and Amazon Web Services, Inc. (collectively, “Amazon”) respectfully submit this opening brief addressing the disputed claim terms of U.S. Patent Nos. 7,693,720 (the “720 patent”), 8,015,006 (the “006 patent”), 8,195,468 (the “468 patent”), 9,263,039 (the “039 patent”), and 9,495,957 (the “957 patent”) (collectively, the “asserted patents”).<sup>2</sup> The parties dispute the construction of ten terms.

### **APPLICABLE LAW GOVERNING CLAIM CONSTRUCTION**

A patent is “a contract between the inventor and the government” where, “[i]n return for full disclosure of the invention the government gives a monopoly of sorts for a time.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 997 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370 (1996). To obtain the benefit of this bargain, the inventor must fully disclose the invention in a way that “sets out the metes and bounds of the property the inventor owns for the term.” *Id.* A patent disclosure must collectively “inform those skilled in the art about the scope of the invention with reasonable certainty” to “apprise the public of what is still open to them.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 909-10 (2014). Where a patentee does not disclose the invention in such a manner, the patent is invalid under 35 U.S.C. § 112 that requires a patent claim “particularly point[] out and distinctly claim[] the subject matter” that is the invention.

Indeed, it is the claim language that “delineate[s] the precise scope of a claimed invention and [] give[s] notice to the public, including potential competitors, of the patentee’s right to exclude.” *Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 781 (Fed. Cir. 2010). Thus, “[w]hen the parties present a fundamental dispute regarding the scope of a claim term, it is the court’s duty to resolve it.” *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008). “It is critical for trial courts to set forth an express construction of the material claim terms in dispute,

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<sup>2</sup> The parties do not seek construction of any terms of U.S. Patent No. 8,140,327.

in part because the claim construction becomes the basis of the jury instructions, should the case go to trial.” *AFG Indus., Inc. v. Cardinal IG Co.*, 239 F.3d 1239, 1247 (Fed. Cir. 2001).

Claim terms are generally given their plain and ordinary meaning, as would have been understood by a person of ordinary skill in the art (a “POSITA”) at the time of the invention and after reading the patent and its prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (*en banc*). When construing claims, courts must consider “what was invented, and what exactly was claimed.” *MySpace, Inc. v. GraphOn Corp.*, 672 F.3d 1250, 1256 (Fed. Cir. 2012). Claim construction analysis begins “by considering the language of the claims themselves.” *Trs. of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1362 (Fed. Cir. 2016). But the analysis does not end there. Because “[a]n inventor is entitled to claim in a patent what he has invented, but no more,” *MySpace*, 672 F.3d at 1256, the inquiry must then turn to the patentee’s description of the invention in the patent specification. *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008). “The specification is the ‘single best guide to the meaning of a disputed term,’ and ‘is, thus, the primary basis for construing the claims.’” *Trs. of Columbia Univ.*, 811 F.3d at 1362. Finally, a court may also consider extrinsic evidence such as expert testimony. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317-19 (Fed. Cir. 2005).

## ANALYSIS

### I. THE ASSERTED PATENTS

The asserted patents are related, share much of their specifications, and list many of the same inventors. (*See* Decl. of Dr. Michael Johnson (“Johnson Decl.”) ¶¶ 24-29.) As their similar titles suggest the patents are generally directed to “supporting,” “processing,” or “responding to” “natural language utterances.” (720 patent at (54); 006 patent at (54); 468 patent at (54); 039 patent at (54); 957 patent at (54).) But the patents themselves acknowledge that speech recognition technology was already “successfully used in a wide range of applications” before the patents, and



“[n]atural language processing [had] previously been applied to the parsing of speech queries.” (720 patent at 1:56-61; 006 patent at 1:45-48; 468 patent at 1:61-66; 957 patent at 2:1-6; 039 patent at 1:52-55; Johnson Decl. ¶¶ 30-34.) According to the patents, natural language questions “can only be interpreted in the context of previous questions, knowledge of the domain, or the user’s history of interests and preferences,” and as a result they are difficult to transform into “machine processable form” and the system may need to consult “multiple data sources” to get the correct answer. (720 patent at 2:1-12, 2:13-42; Johnson Decl. ¶ 31.) But the asserted patents do not disclose any inventive concept to solve these purported problems. (Johnson Decl. ¶¶ 31, 35-43.) The 720, 006, 957, and 468 patents claim understanding and responding to a spoken request using its context. (*Id.* ¶¶ 35-41.) And the 039 and 468 patents claim responding to a request that has spoken and non-spoken portions. (*Id.* ¶¶ 40-43.)

The patents describe that the alleged invention can be applied to multiple “application areas” also referred to as “domains.” (720 patent at 9:6-10; *see* 720 patent at 4:25-27; *see* Johnson Decl. ¶ 58.) The patents explain that a speech system provides these domains by organizing “domain specific information and behavior . . . into agents.” (720 patent at 21:38-39, 4:37-38; Johnson Decl. ¶ 106.) Examples of domains are “driving directions,” “travel services,” and “entertainment scheduling.” (720 patent at 4:40-49; *see also id.* at 9:6-10, 13:55-58, 14:53-55.) And the domain “[a]gents are executables”—that is, “packages of executable code”—“that receive, process, and respond to user questions, queries and commands” for a “specific area of functionality.” (720 patent at 4:7-13, 4:37-38; *see* Johnson Decl. ¶¶ 104-06.)

The overall process described in the patents begins with receiving the user’s utterance at a speech unit with a microphone. (720 patent at 20:27-29.) The utterance is processed by filters, compressed, and passed to a speech recognition engine that recognizes words and phrases. (*Id.* at 20:31-35, 20:62-21:2.) These recognized words and phrases are passed to a “parser” that

“determine[s] a context for [the] utterance.” (*Id.* at 27:2-5, 27:56-63; *see* 006 patent at 17:49-51; 468 patent at 34:2-5; 039 patent at 21:16-18; 957 patent at 34:59-62; Johnson Decl. ¶¶ 55-56.) For example, if the utterance contains the keyword “temperature,” the context could be “weather.” (720 patent at 27:63-66.) The context “determine[s] the domain and thereby the domain agent” that needs to be invoked. (*Id.* at 27:63-66; *see id.* at 29:13-14; 006 patent at 17:51-53, 19:1-2; 468 patent at 34:5-7, 35:21-22; 039 patent at 21:18-20, 22:36-37; 957 patent at 34:62-65, 36:14-15; Johnson Decl. ¶¶ 55-56.) After the correct domain agent is identified, the parser “formulate[s] a question or command in the regular grammar used by” that domain agent. (720 patent at 28:25-29; *see* 006 patent at 18:12-16; 468 patent at 34:34-38; 039 patent at 21:46-50; 957 patent at 35:25-30; Johnson Decl. ¶¶ 57-58.) The patents explain that, in this way, “a context defines a set of questions that can be activated or deactivated during a conversation.” (468 patent at 32:55-58; 039 patent at 20:1-4; 957 patent at 33:44-47; Johnson Decl. ¶¶ 57, 60.) The formulated question is passed to the domain agent, which processes the question and generates a response. (720 patent at 21:2-12, 29:10-13; Johnson Decl. ¶¶ 57-58.)

## II. THE DISPUTED CLAIM TERMS AND PHRASES

### A. “context”

Term	Amazon Construction	Dialect Construction
“context” 720 patent, claims 1, 31. 006 patent, claims 1, 2, 3, 5, 10. 468 patent, claims 19, 28. 039 patent, claims 13, 17, 18. 957 patent, claims 1, 7.	a domain or application area that defines a set of questions that can be activated or deactivated during a conversation	Plain and ordinary meaning

The asserted claims recite “determining a context for the natural language speech utterance” and variations thereof. (720 patent, cls. 1, 31; *see also* 006 patent cls. 1, 5, 10 (“determine . . . a context associated with the request contained in the utterance”); 468 patent cl. 19 (“determining a most likely context for the multi-modal input”).) The patents explain that the

context “determine[s] the domain and thereby, the domain agent” that should be invoked to generate a response. (720 patent at 27:60-65; *see also id.* at 29:13-14 (“Based on the context, the parser can evoke the correct agent to process the question or command.”); Johnson Decl. ¶¶ 55-56.) Indeed, the 006 patent claims make clear that the domain agents in the alleged invention are “*context-specific* domain agents.”<sup>3</sup> (006 patent cls. 1, 5, 10.) Thus, Amazon’s construction correctly captures that a “context” corresponds to a specific domain or application area, such as “weather” or “driving directions.” (720 patent at 27:60-66, 4:40-49; Johnson Decl. ¶¶ 54-59, 65.)

The remainder of Amazon’s construction tracks the definition of “context” in the patents:

The voice query language may be sensitive to the contents of the context stack, wherein *a context defines a set of questions that can be activated or deactivated during a conversation.*

(468 patent at 32:55-58; *see* 039 patent at 20:1-4; 957 patent at 33:44-47; Johnson Decl. ¶ 60.)

The claims consistently recite using the determined context to identify a question, *i.e.*, what the user is asking. In the 720 and 006 patent claims, a “domain agent” is selected based on the determined context, *a question is formulated* in a “grammar” used by the domain agent, and the domain agent generates a response to the question. (720 patent, cls. 1, 31 (“selecting at least one of the plurality of domain agents based on the determined context,” “wherein *the at least one question or command is formulated* in a grammar that the selected domain agent uses to process the formulated question or command”); 006 patent, cls. 1, 5, 10 (“*formulating*, at the parser, *the request* contained in the utterance in accordance with a grammar used by a domain agent associated with the determined context”).) Similarly, the 468 patent claims recite “identifying a domain agent associated with the most likely context,” “*communicating a request* to the identified domain agent,” and “generating a response to the user from content provided by the identified domain agent as a result of processing the request.” (468 patent, cl. 19.) The 039 patent claims

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<sup>3</sup> All emphasis added unless otherwise noted.

recite “*generat[ing] a query*,” comparing the text of the query to “entries in a context description grammar,” generating “a relevance score” based on the results from the comparison, and “selecting one or more domain agents” based on the relevance score. (039 patent, cl. 13.) The 957 patent claims recite “*determin[ing]*, based on the determined one or more words and the context information, *the command or the request* associated with the natural language utterance.” (957 patent cls. 1, 7.) Thus, in light of the intrinsic record, a POSITA would have understood that a “context” defines a set of questions that can be activated. (Johnson Decl. ¶¶ 60-62.)

While the asserted claims of the 957 and 039 patents do not recite “context” by itself, they recite the related phrases “context entries” and “entries in a context description grammar.” (957 patent cls. 1, 7; 039 patent cl. 13.) Amazon’s construction of “context” is consistent with these related phrases. (Johnson Decl. ¶¶ 63-64.) As explained in Section II.C., “context entries” are elements of an ordered list (the “context stack”) that store or identify contexts. And a “grammar” specifies the permissible structures for a language. *Infra* Section II.D. An “entr[y] in a context description grammar” is type of grammar that specifies the permissible language structures within a particular context. (See 039 patent at 13:64-14:4 (“The text combination may be compared against entries in a context description grammar that is associated with each agent 106. If a match is identified between an active grammar in the context description grammar and the command and/or request, then the match may be scored.”); Johnson Decl. ¶¶ 64, 90.)

Dialect offers an undefined “plain and ordinary meaning” so it can later argue that the “context” can be *any* information.<sup>4</sup> Dialect cites a district court’s decision not to construe

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<sup>4</sup> The term “context” is not to be confused with “context information,” which is separately recited in the claims. (957 patent cls. 1, 7.) As an example, if the context for an utterance is “weather,” other pieces of information such as “location, date and time” may be used to respond. (957 patent at 35:43-45.) Amazon’s construction of “context” does not preclude this other information from being “context information.” (See, e.g., 957 patent at 7:39-51 (“the system may use context information . . . to minimize the interaction with the user required to deliver a

“context” in a separate litigation, *VB Assets v. Amazon*, which involved a different set of patents. (Ex. 1, J. Constant Email.) The asserted patents in this case have different claims, different specifications, and are not even in the same patent families as the *VB Assets* patents. *SIPCO, LLC v. Emerson Elec. Co.*, 980 F.3d 865, 870 (Fed. Cir. 2020) (“similarly worded claims may be construed differently” in different patents). The meaning of “context” must be ascertained within the purported invention described in the asserted patents, and these patents provide a specific description of “context” that must be reflected in the claims. *See MySpace*, 672 F.3d at 1256 (“An inventor is entitled to claim in a patent what he has invented, but no more.”). Leaving the term unconstrued, as Dialect urges the Court to do, will only cause jury confusion and invite experts to offer competing views as to what “context” is in the purported invention. Nor will it define the term in the way it is used in the purported invention. Thus, because Amazon’s construction is consistent with the intrinsic evidence and Dialect’s interpretation cloaked as a “plain and ordinary meaning” is designed to capture what the inventor did not claim, the Court should adopt Amazon’s construction. *O2 Micro*, 521 F.3d at 1361 (“In this case, the ‘ordinary’ meaning of a term does not resolve the parties’ dispute, and claim construction requires the court to determine what claim scope is appropriate in the context of the patents-in-suit.”).

#### B. “context stack”

Term	Amazon Construction	Dialect Construction
“context stack” 006 patent, claim 2. 468 patent, claims 19, 28. 957 patent, claims 1, 3, 4, 7. 039 patent, claim 17.	an ordered list of elements, each element storing or referencing a context*  *“context” as construed in Section II.A.	Plain and ordinary meaning, or in the alternative a data structure that stores or references contexts

response”).) But the claim language is clear that an utterance has a single determined “context” (or “most likely context”) that is used to select a domain agent. (720 patent, cls. 1, 31; 006 patent cls. 1, 5, 10; 468 patent cl. 19.) Accordingly, the “context” must be a domain or application area and not the other types of information—because merely knowing that the utterance pertains to the location “Seattle” would not allow one to determine whether the correct domain agent to invoke is the weather agent or the driving directions agent. (*See Johnson Decl.* ¶¶ 66-67.)

Both parties’ constructions of this term require a context stack to store or reference contexts. Thus, while the parties dispute the meaning of “context” as discussed in Section II.A., the only separate dispute for this term is whether a context stack is an ordered list of elements (Amazon’s construction), or whether it can be any data structure (Dialect’s construction).

The patents expressly state the context stack is “an ordered list”: “Agents 106 may update a context stack, that includes an ordered list of command contexts, to enable follow-up requests.” (468 patent at 20:10-12; 957 patent at 20:44-46; 039 patent at 14:7-9.) This description matches the established, well-known meaning of “stack” in the computing field. (Johnson Decl. ¶¶ 74-77.) As Dr. Johnson explains, a POSITA would have understood that a “stack” is a specific data structure in which elements are stored as an ordered list, with the most recently added element at the top of the stack and the oldest element at the bottom of the stack. (*Id.* ¶ 74; *see* Ex. 4, IEEE100: THE AUTHORITATIVE DICTIONARY OF IEEE STANDARDS TERMS (7th ed. 2000) at 1093 (defining “stack” as “[a] list in which items are appended to and retrieved from the same end of the list, known as the top”).) In *Nazomi Communications, Inc. v. Nokia Corp.*, the Federal Circuit recognized that a stack is this specific data structure that stores information “on a last-in, first-out basis,” “analogous to a stack of papers in an inbox.” 739 F.3d 1339, 1340 (Fed. Cir. 2014).

Dialect seeks to eliminate the well-known meaning of “stack” by expanding “context stack” to be *any* data structure. But “[i]nventors are masters of their claims, and the words they use to describe and claim their invention are decisive and binding.” *Bio-Rad Labs., Inc. v. Int’l Trade Comm’n*, 998 F.3d 1320, 1331 (Fed. Cir. 2021). The claims recite “stack”—not a generic term like “data store” or “data structure.”

The Court should adopt Amazon’s construction that is consistent with the claim language and reject Dialect’s impermissible attempt to broaden the scope of the claims.

**C. “context entries” and “entries in a context stack”**

<b>Claim Term</b>	<b>Amazon Construction</b>	<b>Dialect Construction</b>
“context entries” 957 patent, claims 1, 3, 4, 5, 7.	elements of an ordered list, each element storing or referencing the context* associated with a prior utterance  *“context” as construed in Section II.A.	Plain and ordinary meaning, or in the alternative contexts or references to contexts
“entries in a context stack” 468 patent, claim 19.	elements of an ordered list, each element storing or referencing a context*  *“context” as construed in Section II.A.	Plain and ordinary meaning, or in the alternative contexts or references to contexts

Both parties’ constructions require the “context entries” and “entries in a context stack” to be either contexts or references to contexts. Thus, while the parties dispute the meaning of “context” as discussed in Section II.A., the only disputes for this term are whether (1) the “context entries” and “entries in a context stack” must be elements of an ordered list, and (2) the “context entries” of the 957 patent claims store or reference contexts associated with prior utterances.

On the first dispute, the claims recite that the “context entries” are in a “context stack.” (468 patent cl. 19 (“identifying one or more entries in a context stack”); 957 patent cls. 1, 7 (“generate a context stack comprising context information that corresponds to a plurality of prior utterances, wherein the context stack includes a plurality of context entries”).) As explained in Section II.B, the patents expressly state the context stack is “an ordered list,” and this is how a POSITA would have understood “stack,” which had a well-known meaning in the art. (468 patent at 20:10-12; 957 patent at 20:44-46; Johnson Decl. ¶ 74.) Thus, the claimed “context entries” and “entries in a context stack” are elements of an ordered list. (Johnson Decl. ¶ 81.)

By equating “entries in a context stack” with “contexts or references to contexts,” Dialect’s construction reads out both “stack” and “entries” from the claims. “[I]nterpretations that render some portion of the claim language superfluous are disfavored.” *Power Mosfet Techs., LLC v.*

*Siemens AG*, 378 F.3d 1396, 1410 (Fed. Cir. 2004). Dialect’s construction of “context entries” suffers from the same flaws by reading “entries” out of the claim.

On the second dispute, the 957 patent claims recite that the “context stack includes a plurality of context entries” and “compris[es] context information that corresponds to a plurality of prior utterances.” (957 patent cls. 1, 7.) The claims also recite that “***the context information includes the one or more context entries.***” (*Id.*) “In determining the true meaning of the language of the [claim], the grammatical structure and syntax thereof may be instructive.” *Credle v. Bond*, 25 F.3d 1566, 1571 (Fed. Cir. 1994). The phrase “***the context information***” refers to the earlier-recited “context information that corresponds to a plurality of prior utterances.” Therefore, basic English grammar requires the “one or more context entries,” which are included in the context information, to correspond to prior utterances. *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001) (“a claim term should be construed consistently with its appearance in other places in the same claim”); (Johnson Decl. ¶ 82.)

The Court should adopt Amazon’s constructions because they are correct and will assist a jury in understanding the claim language. *Sulzer Textil A.G. v. Picanol N.V.*, 358 F.3d 1356, 1366 (Fed. Cir. 2004) (“[T]he district court must instruct the jury on the meanings to be attributed to all disputed terms used in the claims in suit so that the jury will be able to ‘intelligently determine the questions presented.’”)

#### D. “grammar”

Claim Term	Amazon Construction	Dialect Construction
“grammar” 720 patent, claims 1, 31. 006 patent, claims 1, 5, 10. 039 patent, claim 13.	a formal specification of the permissible structures for a language	Plain and ordinary meaning, or in the alternative, “a set of principles that govern an acceptable input or request”

Amazon’s proposed construction represents the plain and ordinary meaning of the term and is consistent with the intrinsic record and the only extrinsic evidence of record. Dialect’s



construction, equating a “grammar” with any “set of principles that govern an acceptable input or request,” finds no support in the intrinsic or extrinsic record and is not how a person of ordinary skill in the art would understand the term.

First, the Court may consider “dictionaries, treatises and textbooks to understand how one of skill might use that claim term, ‘as long as those sources are not used to contradict claim meaning that is unambiguous in light of the intrinsic evidence.’” *Lone Star Silicon Innovations LLC v. Iancu*, 813 Fed. App’x 512, 517 (Fed. Cir. 2020) (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1324 (Fed. Cir. 2005)). Amazon’s proposed construction comes directly from a definition in a textbook that defines “grammar” in the context of language modeling and spoken language understanding—the field of the purported invention—as “a formal specification of the permissible structure for the language.” (Ex. 2, Huang et al., *SPOKEN LANGUAGE PROCESSING: A GUIDE TO THEORY, ALGORITHM, AND SYSTEM DEVELOPMENT* (2001) at 545-46.)

Reliance on this extrinsic evidence is appropriate because it is consistent with the intrinsic record. *See Seabed Geosolutions (US) Inc. v. Magseis FF LLC*, 8 F.4th 1285, 1287 (Fed. Cir. 2021). In claims 1 and 31 of the 720 patent, and claims 1, 5, and 10 of the 006 patent, a question, command, or request is formulated in accordance with a “grammar” that the domain agent uses to process the utterance. (720 patent, cls. 1, 31; 006 patent, cl. 1, 5, 10.) The claims thus require that the received words be formulated to fit the specifications of the language used by the domain agent so that the domain agent can process it. (Johnson Decl. ¶¶ 83-87, 91-92.)

This understanding is consistent with the 720 and 006 patent disclosures, which provide that a “grammar” is used “to clearly specify the keyword used to determine the context and present a set of one or criteria or parameters.” (720 patent at 26:47-49.) Further, it explains, “[o]nce the context for the question or command has been determined, the parser 118 can invoke the correct agent,” and then “formulate a question or command in the regular grammar used by agents” (720

patent at 28:25-29; 006 patent, at 18:12-16.) The specification thus explains that the parser invokes an agent based on the context of the command or request, and then formulates a question in the grammar used by the selected agent so that it may process it. (Johnson Decl. ¶ 88). A POSITA would, thus, understand that a “grammar” in the patents is a formal specification of the structures for a language so that the domain agent can process the utterance, and not simply any “set of principles that govern” an input or request as Dialect proposes. (Johnson Decl. ¶¶ 83-88, 91-92.)

Intrinsic evidence from the 039 patent is likewise consistent with Amazon’s proposed construction. In claim 13, text combinations are compared against entries in a context description grammar, which is then used to generate a relevance score. (039 patent, cl. 13.) That score is then used to select appropriate domain agents—*i.e.*, agents that can process the communications in accordance with specifications of the permissible structures for a language. (*Id.*) The specification provides a consistent description, stating, “[t]he command or request may be compared against a context description grammar to identify a match” by “scor[ing]” “[a]ny active grammars . . . against the command or request” so that “a best match may be sent to a response generator module.” (*Id.* at 13:61-14:9.) Again, a POSITA would understand the “grammars” to be specifications of the permissible structures for a language. (Johnson Decl. ¶¶ 89-92.)

Dialect’s construction is incorrect and contrary to the ordinary meaning of “grammar” to one of skill in the art. Nothing in the intrinsic record supports the notion that a grammar is broad enough to encompass any “set of principles.” Furthermore, Dialect has not identified any expert testimony or other extrinsic evidence that support its proposed construction. Finally, it is not clear what Dialect means by “an acceptable input or request,” as neither the specifications nor claims use these terms. Dialect’s proposal would thus improperly introduce ambiguity into the claims. *Immunex Corp. v. Sanofi-Aventis U.S. LLC*, 977 F.3d 1212, 1221 (Fed. Cir. 2020) (it is improper to “introduce ambiguity” through claim construction); (Johnson Decl. ¶ 93).

**E. “domain agent”**

<b>Claim Term</b>	<b>Amazon Construction</b>	<b>Dialect Construction</b>
“domain agent” 720 patent, claims 1, 31. 006 patent, claims 1, 2, 5, 10. 468 patent, claims 19, 30, 32. 039 patent, claims 13, 14.	a software package or module that receives, processes and responds to user questions, queries and commands in a specific domain	software that receives, processes and responds to user questions, queries and commands in a domain

The parties dispute whether a “domain agent” is a software package that receives, processes and responds to user questions, queries and commands in a *specific* domain, as Amazon proposes, or in *any* domain, as Dialect proposes.

“Domain agent” is a coined term that does not have a generally understood meaning to a POSITA. (Johnson Decl. ¶¶ 105-06.) The Federal Circuit has held that the meaning of such terms must be understood by reference to their use in the specification. *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1321 (Fed. Cir. 2013) (“Idiosyncratic language, highly technical terms, or terms coined by the inventor are best understood by reference to the specification.”).

The patentee uses the term “domain agent” to describe a particular subset of “agents.” “Agents,” as described in the patent and known in the art, are executable software packages that “receive, process and respond to user questions, queries and commands.” (See, e.g., 720 patent at 4:7-8; Johnson Decl. ¶¶ 94-104.) The patents define multiple types of agents, including generic “agents” and specialized “types of agents,” including “system agents,” “knowledge agents,” and “domain agents.” (See, e.g., 039 patent, 3:27-31, 12:43-47, 14:38-54.) The distinguishing characteristic of a “domain agent” is that it includes behavior specific to a domain. (Johnson Decl. ¶¶ 106-08.) The 720 patent, for example, explains that “[t]he software behavior and data in an agent can either be of a general-purpose nature *or specific to a domain* or area of functionality,” where “*domain specific agents* include the behavior and data required for a *specific area of functionality*.” (720 patent at 4:25-38; see also 039 patent at 14:38-41.) In other words, according

to the patents, an agent can be a general one or a domain-specific one. Amazon’s proposed construction thus captures the defining, distinguishing trait of the “domain agent”—its “domain specific behavior”—and thus should be adopted.

Dialect’s proposal discards the defining characteristic of domain agents and conflates the “domain agent” with *any agent* that is involved in the response to a user’s question in a domain, thereby eliminating the specific requirement of a “domain agent” from the claims.<sup>5</sup> The claims of the 720 patent, for example, recite both a “domain agent” and a “system agent.” (720 patent, cl. 1 (“an agent architecture that communicatively couples services of each of an agent manager, a *system agent*, the plurality of *domain agents*”).) The system agent “provides default functionality and basic services” like “transmitting and receiving information over data networks, parsing text strings . . . and other functions,” such as database lookup and text to speech formatting. (720 patent at 4:30-34, cls. 1, 28, 31.) The domain agent, as noted above, provides domain-specific behavior and data for a specific area of functionality. (*Id.* at 4:24-38.) But under Dialect’s construction, a system agent that provides only general functionality like database lookups or text to speech formatting would be a “domain agent,” because it is involved in responding to a question that falls within a domain. (Johnson Decl. ¶¶ 108-09.) Such a result would improperly conflate two distinct claim terms and be inconstant with the specification. *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006) (the use of “two terms in a claim requires that they connote different meanings”).

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<sup>5</sup> Dialect now concedes its proposal incorrectly omits “domain-specific behavior.” On March 13, 2024, the deadline for opening briefs, Dialect proposed a new construction, “software with *domain-specific behavior and information.*” (Ex. 6 (R. Koehl email).)

**F. “procedures sensitive to the determined context”**

<b>Term</b>	<b>Amazon Construction</b>	<b>Dialect Construction</b>
“procedures sensitive to the determined context” 006 patent, claim 5.	Indefinite under 35 U.S.C. § 112	Plain and ordinary meaning, or in the alternative procedures that consider the determined context

This term is indefinite under 35 U.S.C. § 112 because “its legal scope is not clear enough that a person of ordinary skill in the art could determine whether a particular [product] infringes or not.” *Geneva Pharms, Inc. v. GlaxoSmithKline PLC*, 349 F.3d 1373, 1384 (Fed. Cir. 2003). The claims, specification, and prosecution history do not place any bounds on what “procedures sensitive to the determined context” could or could not be. (Johnson Decl. ¶¶ 114-16.) Claim 5 of the 006 patent recites “wherein the parser extracts the one or more criteria and the one or more parameters using procedures sensitive to the determined context,” without any further detail that could provide an objective boundary of what procedures are within the scope of the claim. The disputed term does not appear in the specification, which only nominally mentions “context sensitive procedures” without providing any insight as to what this means. (006 patent at 18:19-22 (“The criteria handlers 152 provide context sensitive procedures for extracting the criteria or parameters from the user's question or command.”), 25:5-7 (“A context sensitive procedure for extracting the criteria or parameters from the properly interpreted query and/or command may be used.”).) The specification describes general categories of ways one could determine criteria—by “executing algorithms in the agent,” and by “applying probabilistic [or] fuzzy reasoning to tables of possible values.” (006 patent at 18:22-30, 25:7-15.) But the specification does not even address whether these described methods are “procedures sensitive to the determined context,” much less how a person of ordinary skill in the art can determine whether the claim term is met. *IQASR LLC v. Wendt Corp.*, 825 F. App'x 900, 906 (Fed. Cir. 2020) (nonprecedential) (finding “magnetic fuzz” indefinite as “[o]pen-ended definition of categories that might or might not possess certain

traits cannot provide reasonably certain bounds on the scope of” the term). Nor is there any extrinsic evidence that can provide any insight; indeed, Dialect cites no extrinsic evidence that establishes an objective boundary for the term. (Ex. 3, Dialect’s disclosure of extrinsic evidence.)

To be “sensitive” to the determined context, as the claim recites, is a term of degree. (Johnson Decl. ¶¶ 113, 117.) As Dr. Johnson explains, the patent does not inform a POSITA with reasonable certainty how much of an effect, if any, the determined context must have on the procedures used by the parser to extract criteria and parameters, in order to meet the claim limitation “procedures *sensitive* to the determined context.” (*Id.*) A parser could use procedures that rely entirely on the determined context to dictate the steps used to extract criteria and parameters. (*Id.* ¶ 117.) Or the determined context could be one of hundreds of different inputs that are weighted equally to determine the steps used to extract criteria and parameters. (*Id.*) Even if the determined context has no effect at all on what criteria and parameters the parser extracts, the *procedures* for extracting could still be affected by the determined context. For example, the parser could use procedures that require the context to be determined before the parser begins extracting criteria and parameters. (*Id.*) The patent does not provide any objective methodology by which to judge whether a procedure is “sensitive to the determined context.” (*Id.*) Thus, the claim term “fails to provide sufficient notice of its scope” because “it depends ‘on the unpredictable vagaries of any one person’s opinion.’” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (quoting *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1350 (Fed. Cir. 2005)); see *Intell. Ventures I LLC v. T-Mobile USA, Inc.*, 902 F.3d 1372, 1381 (Fed. Cir. 2018) (finding the claimed “‘QoS requirements’ [] entirely subjective” where the patent “characterize[d] it as ‘a relative term, finding different meanings for different users’”).

Dialect’s proposed “plain meaning” is an arbitrary rewrite of the claim language, replacing “sensitive” with “consider,” that finds no support in the specification. Indeed, Dialect’s proposal

only confirms the indefiniteness of the claim term, as it fails to “afford clear notice of what is claimed.” *Nautilus, Inc.*, 572 U.S. at 901. Just like the claim language itself, Dialect’s proposal does not inform a POSITA with reasonable certainty how much effect, if any, the determined context must have on the procedures used to extract criteria and parameters to meet the claim limitation. (Johnson Decl. ¶ 118.) Thus, Dialect’s “plain meaning” cannot save the claim from indefiniteness. *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1251 (Fed. Cir. 2008) (“[w]hen a proposed construction requires that an artisan make a separate infringement determination for every set of circumstances . . . that construction is likely to be indefinite”).

The claim term fails to provide any reasonable certainty of what constitutes “procedures sensitive to the determined context,” and is thus indefinite. *Nautilus*, 572 U.S. at 909.

**G. Terms Governed By 35 U.S.C. § 112, Paragraph 6**

Claims 1 and 31 of the 720 patent and claims 1, 5, and 10 of the 006 patent each contain limitations reciting the term “parser” and associated functions. The parties dispute whether these limitations should be governed under § 112, ¶ 6, and if so, whether there is sufficient structure disclosed in the specification to support the limitation. Each limitation must be construed under § 112, ¶ 6 because the claimed “parser” is a “black box” software module that connotes no specific structure to one of skill in the art. Further, each claim is invalid as indefinite because the specification fails to disclose any structures clearly linked to the recited functions. Dialect’s position is that the term is not governed by § 112, ¶ 6, that “parser” need not be construed, and that the plain and ordinary meaning of parser is “software that analyzes a string of words.” Dialect has declined to identify any functions or structure linked to the recited functions of the parser module.

Under pre-AIA 35 U.S.C. § 112, ¶ 6, a patent claim may be expressed using functional language (describing what the invention does) instead of using implementation terms (detailing how the invention works). These are frequently referred to as “means-plus-function limitations.”

*Mas-Hamilton Group v. LaGard, Inc.*, 156 F.3d 1206, 1211 (Fed. Cir. 1998). But § 112, ¶ 6 has an important limitation. When patentees use functional claiming, they must also disclose in the specification what structure, device, or acts can be used to *achieve* that function. If there is no such disclosure, the claim is invalid as indefinite. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349-51 (Fed. Cir. 2015) (*en banc*). This ensures that the scope of the patentee’s right of exclusion is expressly limited to the specific solutions disclosed in the specification, and it reflects a straightforward application of the fundamental principle that patentees cannot claim more than what they invented. *See MySpace*, 672 F.3d at 1256.

To determine whether a claim is invalid under § 112, ¶ 6, the Court must conduct a two-step analysis: first, the Court decides whether a claim limitation is governed by § 112, ¶ 6 (*i.e.*, whether it uses functional claiming); if so, the Court determines whether the patent sufficiently describes “the structure, material, or acts” to perform the function. 35 U.S.C. § 112, ¶ 6.

For the first step—determining whether a claim is governed § 112, ¶ 6—the test “is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Id.* Although there is a rebuttable presumption that § 112, ¶ 6 does not apply when the claim language does not include the terms “means” or “step for,” that presumption is not “a strong one.” *Williamson*, 792 F.3d at 1348-49. The essential inquiry is, instead, “whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Id.* at 1349. And § 112, ¶ 6 will govern if a claim “fails to ‘recite[] sufficiently definite structure’ or else recites ‘**function without reciting sufficient structure for performing that function.**’” *Id.* at 1349 (citing *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)). Indeed, the Federal Circuit has explained that “abstract elements,” generic placeholder terms such as “processor,” “symbol generator,” “control module,” “control circuit,” “pressure control assembly,” “colorant selection mechanism,”



“element,” “device,” “control module,” and terms “that reflect nothing more than verbal constructs” may be viewed as “tantamount to using the word ‘means’” because they “do not connote sufficiently definite structure.” *Williamson*, 792 F.3d at 1350 (citing *Mass. Inst. of Tech. & Elecs. For Imaging, Inc. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006); *see also* *Advanced Ground Info. Sys., Inc. v. Life360, Inc.*, 830 F.3d 1341, 1348 (Fed. Cir. 2016); *WSOU Investments LLC v. Google LLC*, 2023 WL 6889033, at \*4 (Fed. Cir. Oct. 19, 2023); *Intelligent Automation Design, LLC v. Zimmer Biomet CMF and Thoracic, LLC*, 799 Fed. Appx. 847, 851 (Fed. Cir. 2020).

The second step requires the Court to determine “what structure, if any, disclosed in the specification corresponds to the claimed function.” *Williamson*, 792 F.3d at 1351. Structure disclosed in the specification qualifies as “corresponding structure” only if the intrinsic evidence clearly links or associates that structure to the function recited in the claim and is “adequate . . . to achieve the claimed function.” *Id.* at 1351-52 (citations omitted).

**1. The claimed “parser” is a “black box” subject to § 112, ¶ 6.**

Each of the four claims that recite a “parser” must be construed under § 112, ¶ 6 because the claimed “parser” is a “black box” software module that connotes no specific structure to one of skill in the art. *See Williamson*, 792 F.3d at 1350-51. The common disclosures of the 720 and 006 patent specifications<sup>6</sup> explain that the “parser” is not a specific structure, but rather a black-box software “module” defined by the functions it performs. The specification explains that the “parser” of the invention is one of many software modules installed on the computer:

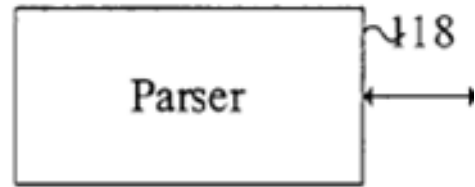
“[T]he invention includes software that is installed onto the computer, where *the*

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<sup>6</sup> The specifications of the two patents are largely identical with respect to the disclosures related to the claimed “parser.” The only differences are insignificant grammatical changes and the omission of one of the “major categories of data” used to “configure the data driven agents 156.” (*Compare* 720 patent, 23:57-63 *with* 006 patent, 13:48 (omitting category “2”).) Citations herein are made to the 720 patent specification but apply to both the 720 and 006 patents.

*software includes one or more of the following modules:* a speech recognition module . . . ; *a parser for parsing the input*, a text to speech engine module for converting text to speech . . . and other modules.”

(720 patent at 3:20-28.) And, even though the claims and specification state that the parser performs multiple specific functions, including “process[ing] recognized words and phrases [by] transform[ing] them into complete commands and questions,” “invok[ing] the required agent,” “evaluat[ing] . . . a context or question,” “interpret[ing]” words and phrases, “examin[ing] the tokens for the questions or commands, context and criteria,” “determ[ing] context for an utterance by applying prior probabilities or fuzzy possibilities,” “formulat[ing] a question or command in the regular grammar,” the specification only identifies an empty box labeled “Parser” as performing these functions.



(*Id.* at Fig. 5, 20:67-21:2, 21:62-65; 23:42-24:44; 27:1-5; 27:56-29:13; Johnson Decl. ¶¶ 120-30.)

The claims confirm the parser is a black-box module defined by the functions it performs. For claims 1 and 31 of the 720 patent, no structure is provided for the claimed “parser.” The claims recite only what the parser does, by stating in claim 1 that the parser “interprets the recognized words or phrases,” and, in claims 1 and 31 stating that the parser performs three steps: “determining a context,” “selecting” a domain agent, and “transforming the recognized words or phrases” into a question or command. For claims 1, 5, and 10 of the 006 patent, the “parser” is defined solely by reference to functionality. For claims 1 and 10, the parser is defined by reference to the claimed functions of “parsing” and “formulating.” For claim 5, the “parser” is defined by reference to the “parsing” and “formulating” functions, where formulating is further defined by “determining” required and optional values, “extracting” criteria and parameters, “inferring” further criteria and parameters, and “transforming” the extracted and inferred criteria and parameters into tokens.

The term “parser” on its own does not have a sufficiently definite meaning as the name for

structure to achieve all the functions required of the parser in the claims. As Amazon's expert, Dr. Johnson, who had more than ordinary skill in the art at the time of the patents, explains, while a "parser" would have been known to a POSITA, it would not have been known to connote a structure. (Johnson Decl. ¶¶ 3-9, 44-46, 126-127 (citing Ex. 5, James Allen, NATURAL LANGUAGE UNDERSTANDING (Second Ed., 1995) at 15).) Rather, a parser would have been recognized as a process that maps a sentence to its syntactic structure and logical form. (*Id.*) And, even if a parser was a known process for analyzing a sentence, it was not known to be a structure that performs the completely different set of functions recited in the claims. (*Id.* ¶¶ 127-29.) The claimed parser in the 720 patent performs the functions of "determining a context," "selecting" a domain agent, and "transforming the recognized words or phrases" into a question or command, and the 006 patent, in addition to "parsing," also performs "formulating" a request by "determining" required and optional values, "extracting" criteria and parameters, "inferring" further criteria and parameters, and "transforming" the extracted and inferred criteria and parameters into tokens. (*Id.*) There was no notion of a parser in the art that would provide a structure for performing these claimed functions. (*Id.*)

Dialect apparently agrees with Dr. Johnson's opinion that a parser would not have been known to provide structure for all of its functions in the claims. Dialect contends that the plain meaning of parser is "software that analyzes a string of words." (Ex. 1, Constant email.) While this proposed construction suggests that a parser may have been known to analyze sentences, it also concedes that it would *not* have been known to provide structure for performing the remaining functions. As a result, the claimed parser operates in the claims as a self-referential black box, defined by the functions it performs, rather than by reference to any known structure in the art. Further, Dialect did not disclose any extrinsic evidence indicating that a "parser" would have been known by a POSITA to connote any particular structure or would have been known as anything

other than a process to analyze words. (*See* Ex. 3, Dialect’s disclosure of extrinsic evidence.)

The Federal Circuit has invoked § 112, ¶ 6 for similar limitations. In *Williamson*, the Federal Circuit determined that “distributed learning control module” was governed by § 112, ¶ 6 because the written description “fail[ed] to impart any structural significance to the term” or otherwise inform the public of the “structural character of the limitation-in-question.” 792 F.3d at 1351. The court reasoned that the claimed “distributed learning control module” provided nothing more than a “black box recitation of structure for providing the same specified function” no different than if the word “means” had been used. *Id.* at 1350-51.

In addition, other district courts have invoked § 112, ¶ 6 for analogous claims. In *WSOU Investments, LLC v. Xilinx, Inc.*, the term “analyzer” was found to be a mean-plus-function term, even though it was a term known in the art. *WSOU Investments, LLC v. Xilinx, Inc.*, 2022 WL 2093066, at \*5 (D. Del. June 10, 2022), *report and recommendation adopted*, 2022 WL 16707078 (D. Del. Nov. 4, 2022). The court reasoned that even though a POSITA would have understood an “analyzer” to be a structure for measuring an input’s power spectrum, the claims went far beyond that known function by requiring it to analyze the power spectrum in a spectral band around a spectral null and generate a control signal based on the analysis. *Id.* Because the term on its own did not provide such structure and the claim provided no structure to perform those function beyond the term “analyzer,” the court invoked § 112, ¶ 6. *Id.*

Accordingly, the claim language, common specification disclosures, and expert testimony evidencing the perspective of a person of ordinary skill in the art each indicates that the claimed “parser” would not have been understood by a POSITA to provide “sufficiently definite structure” to perform the functions recited in the claims. *See Williamson*, 792 F.3d at 1350. The five claims reciting “parser,” therefore, must be governed by § 112, ¶ 6.

**2. The specification does not disclose structure or an algorithm linked to the claimed “parser” functions, rendering the terms indefinite.**

Because § 112, ¶ 6 governs the “parser” terms, the analysis turns to the next step: whether the specification discloses sufficient structure that corresponds to the claimed functions performed by the parser. *Williamson*, 792 F.3d at 1351. To make this determination, the Court must construe each claim. *Id.* Construing a means-plus-function claim term is a two-step process: first, the Court must identify the claimed function or functions, and second, the Court must determine what structure, if any, disclosed in the specification corresponds to the claimed functions. *Id.* Where there are multiple claimed functions, the patentee must disclose adequate corresponding structure to perform each claimed function. *Id.* at 1351-52. For computer-implemented functions, that requires providing an algorithm clearly linked to the claimed functions. *Id.* at 1352 (“We require that the specification disclose an algorithm for performing the claimed function.”).

Nothing in the specification provides structure adequate to perform each of the functions of the claimed “parser.” The claims are, therefore, invalid. *Id.* (“If the patentee fails to disclose adequate corresponding structure, the claim is indefinite.”).

**a. “a parser that interprets the recognized words or phrases”  
(720 patent, claim 1)**

<b>Claim Term</b> (720 patent, claim 1)	<p>“a parser that interprets the recognized words or phrases, wherein the parser uses at least the data received from the plurality of domain agents to interpret the recognized words or phrases, wherein the parser interprets the recognized words or phrases by:</p> <p style="padding-left: 40px;">determining a context for the natural language speech utterance;</p> <p style="padding-left: 40px;">selecting at least one of the plurality of domain agents based on the determined context; and</p> <p>transforming the recognized words or phrases into at least one of a question or a command . . .”</p>
<b>Amazon Construction</b>	<p>Subject to 35 U.S.C. § 112, ¶ 6.</p> <p><b>Functions:</b> entire limitation, except “a parser that” and “wherein the parser”</p> <p><b>Structure:</b> None disclosed. Indefinite.</p>

Claim 1 of the 720 patent requires that the speech processing system include a “parser that interprets the recognized words and phrases.” The claimed “parser” does not connote a structure to a POSITA, and the claims describe it solely by reference to four functions: (1) “interpret[ing] the recognized words or phrases using at least the data received from the plurality of domain agents,” (2) “determining a context for the natural language speech utterance,” (3) “selecting at least one of the plurality of domain agents based on the determined context,” and (4) “transforming the recognized words or phrases into at least one of a question or a command . . . .” (720 patent, cl. 1; Johnson Decl. ¶¶ 120-29.)<sup>7</sup>

Because § 112, ¶ 6 applies to the construction of this term and it comprises computer-implemented functionalities, to meet the definiteness requirement the specification must recite algorithms for each of the four claimed functions. *See Williamson*, 792 F.3d at 1352. The specification discloses no such algorithm for any of the recited functions, rendering the claim indefinite. (Johnson Decl. ¶¶ 130-36.)

The specification does not disclose an algorithm sufficient under § 112, ¶ 6 for the function, “interpret the recognized words or phrases using at least the data received from the plurality of domain agents.” At best, the specification discloses the result of the function and the data the parser can use to perform it, but it does not disclose any algorithm detailing how to use that data or achieve the intended result. (*See* 720 patent at 7:29-31 (“The system may use profile data in interpreting questions, formulating queries, interpreting results of queries and presenting answers to the user.”); *see also id.* at 24:36-38, 27:1-5 (“The speech recognition engine 120 may recognize words and phrases, using for example, information in the dictionary and phrase tables 112, and pass these to the parser 118 for interpretation.”); Johnson Decl. ¶¶ 130-32.)

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<sup>7</sup> Dialect declined to identify any function or corresponding structure for each of the four § 112, ¶ 6 limitations. (Ex. 1, Constant email.)

Dialect cannot contend that the steps recited in claim 1 collectively comprise the algorithm for this function. For disclosed structure to be “adequate,” it must disclose how “to achieve the claimed function.” *Williamson*, 792 F.3d at 1352. As shown below, none of the steps recited in the claims individually provides sufficient detail or structure for how to achieve the claimed function, and thus collectively do not disclose how to achieve the ultimate function of interpreting the recognized words or phrases.

The specification does not disclose an algorithm sufficient under § 112, ¶ 6 for the function, “determining a context for the natural language speech utterance.” The specification discloses two potential approaches to determine a context. One is to “us[e] a real-time scoring system,” where the “score can be determined from weighting a number of factors including, the user profile 110, the domain agent's 156 knowledge and previous context.” (720 patent at 7:43-46, 28:7-11.) Another is “applying prior probabilities or fuzzy possibilities to keyword matching, user profile 110, dialog history, and context stack contents.” (*Id.* at 27:60-63.) Neither disclosure is sufficient under § 112, ¶ 6. “For a claim to be definite, a recited algorithm . . . must be sufficiently defined to render the bounds of the claim.” *Ibormeith IP, LLC v. Mercedes-Benz USA, LLC*, 732 F.3d 1376, 1379 (Fed. Cir. 2013). At most, the specification describes factors that may be considered in certain approaches, but it does not recite any specific algorithm for applying these factors. (Johnson Decl. ¶¶ 130-31, 133.) And merely describing factors or inputs is insufficient to disclose an algorithm or structure under Federal Circuit precedent. *Ibormeith*, 732 F.3d at 1381-82 (disclosure of “factors” for a calculation with “no limitations on how values are calculated, combined, or weighted” or “merely list[ing] inputs without specifying any . . . algorithm defining the contribution of any of the inputs,” fails to disclose sufficient structure).

For the third function, “selecting . . . domain agents based on the determined context,” the specification only reiterates the claim language and states that the “system can invoke the correct

agent” based on the determined context. (720 patent at 7:46-49; *see also id.* at 6:45-47, 9:31-33, 28:11-12, 28:25-28, 29:10-13.) The specification thus only discloses a result, but it does not disclose any algorithm for *achieving* that result. (Johnson Decl. ¶¶ 130-31, 134.) Such a disclosure is not sufficient to satisfy the definiteness requirement under § 112, ¶ 6. *Aristocrat Techs., Austl. PTY Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1335 (Fed. Cir. 2008) (describing “the results of the operation of an unspecified algorithm” is insufficient to satisfy § 112, ¶ 6).

Finally, for the “transforming the recognized words or phrases into at least one of a question or a command” function, the specification, once again, provides no structure or algorithm. At most, the specification discloses that “the recognized words and phrases may be processed by the parser 118, which transforms them into complete commands and questions using data supplied by the agents,” which is the result of the function itself. (720 patent at 20:8-14; Johnson Decl. ¶¶ 130-31, 135.) This disclosure is not enough to satisfy the definiteness requirement. *Aristocrat Techs.*, 521 F.3d at 1335. Accordingly, because the specification discloses no algorithm clearly linked to the functions defining the “parser,” the term and claims that recite it are indefinite.

**b. “determining, at a parser connected to the computer device on the vehicle” (720 patent, claim 31)**

<b>Claim Term</b> (720 patent, claim 31)	<p>“determining, at a parser connected to the computer device on the vehicle, a context for the natural language speech utterance;</p> <p>selecting, at the parser connected to the computer device on the vehicle, at least one of the plurality of domain agents based on the determined context;</p> <p>transforming, at the parser connected to the computer device on the vehicle, the recognized words or phrases into at least one of a question or a command, wherein the at least one question or command is formulated in a grammar that the selected domain agent uses to process the formulated question or command”</p>
<b>Amazon Construction</b>	<p>Subject to 35 U.S.C. § 112, ¶ 6.</p> <p><b>Functions:</b> entire limitation, except “at [a/the] parser connected to the computer device on the vehicle”</p> <p><b>Structure:</b> None disclosed. Indefinite.</p>

Claim 31 of the 720 patent is a method claim with a nested “parser connected to the



computer device on the vehicle.” Section 112, ¶ 6 may govern a claim term nested in a method claim. *Rain Computing, Inc. v. Samsung Elecs. Am., Inc.*, 989 F.3d 1002, 1006 (Fed. Cir. 2021). The claimed “parser” does not connote a structure to a POSITA, and the claim once again describes this module it solely by reference to three functions: (1) “determining . . . a context for the natural language speech utterance,” (2) “selecting . . . at least one of the plurality of domain agents based on the determined context,” and (3) “transforming . . . the recognized words or phrases into at least one of a question or a command . . . .” (720 patent, cl. 31; Johnson Decl. ¶¶ 130-31, 133-36.) These functions are identical to those recited in claim 1 of the 720 patent. *See supra* Section II.G.2.a. Accordingly, for the reasons set forth above—i.e., because the specification discloses no algorithm clearly linked to the functions defining the “parser”—this claim is indefinite.

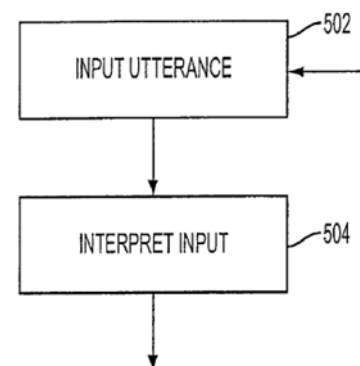
**c. “parsing, at a parser coupled to the processing device” (006 patent, claims 1 and 10)**

<b>Claim Term</b> (006 patent, claims 1, 10)	“parsing, at a parser coupled to the processing device, [the one or more recognized words or phrases / information relating to the utterance] to determine a meaning associated with the utterance and a context associated with the request contained in the utterance, [wherein the one or more recognized words or phrases are further associated with the determined context in response to the one or more recognized words or phrases satisfying the predetermined confidence level];  formulating, at the parser, the request contained in the utterance in accordance with a grammar used by a domain agent associated with the determined context”
<b>Amazon Construction</b>	Subject to 35 U.S.C. § 112, ¶ 6.  <b>Functions:</b> entire limitation, except “at a parser coupled to the processing device” and “at the parser”  <b>Structure:</b> None disclosed. Indefinite.

Claims 1 and 10 of the 006 patent are method claims with a nested “parser” that is “coupled to the processing device.” The claimed “parser” does not connote a structure to POSITA and, the claims describe it solely by reference to two functions: (1) “parsing the one or more recognized words or phrases to determine a meaning associated with the utterance and a context associated with the request contained in the utterance . . . ,” and (2) “formulating the request contained in the

utterance in accordance with a grammar used by a domain agent associated with the determined context.” (006 patent, cls. 1, 10; Johnson Decl. ¶¶ 120-29.)

The specification does not disclose an algorithm sufficient under § 112, ¶ 6 for either function. At most, the specification discloses the intended result of the function and potential data that may be used. The specification states that one embodiment for interpreting a user’s utterance is disclosed by Figure 5 of the 006 patent. (006 patent at 24:31-33.) The parsing function—i.e., “determining a meaning” by interpreting the input—is, however, an empty box, which discloses only that interpreting the input happens, not *how* it happens. (*Id.* at Fig. 5; Johnson Decl. ¶ 138.) That is insufficient to disclose an algorithm. *See, e.g., Aristocrat Techs.*, 521 F.3d at 1335 (describing “the results of the operation of an unspecified algorithm” is insufficient to satisfy § 112 ¶ 6).



The text of the specification is similarly opaque. It explains only that the “parsing” function may be accomplished using “various sources of stored data” such as user profiles, agent data, or dictionaries and phrases. (*Id.* at 24:33-36; Johnson Decl. ¶ 138.) The Federal Circuit has made clear that merely listing inputs without specifying an “algorithm defining the contribution of any of the inputs,” is insufficient. *Ibormeith*, 732 F.3d at 1381-82.

The specification also does not disclose an algorithm sufficient under § 112, ¶ 6 for the function, “formulating the request contained in the utterance.” The specification only restates the functional result with a few suggested inputs, stating:

To formulate a question or command in the regular grammar used by agents, the parser 118 may determine required and optional values for the criteria or parameters. These criteria may have been explicitly supplied by the user or may need to be inferred. The parser 118 makes use of the criteria handlers 152 supplied by the system agent 150.

(006 patent at 18:14-22; *see also id.* at 25:33-35; Johnson Decl. ¶ 139.) Thus, the specification

only discloses a result and potential inputs, which is insufficient. *Ibormeith*, 732 F.3d at 1381-82.

**d. “parsing, at a parser coupled to the processing device” (006 patent, claim 5)**

<b>Claim Term</b> (006 patent, claim 5)	<p>“parsing, at a parser coupled to the processing device, information relating to the utterance to determine a meaning associated with the utterance and a context associated with the request contained in the utterance . . . ;</p> <p>formulating, at the parser, the request contained in the utterance in accordance with a grammar used by a domain agent associated with the determined context, wherein formulating the request . . . includes:</p> <p style="padding-left: 40px;">determining one or more required values and one or more optional values associated with formulating the request in the grammar used by the domain agent;</p> <p style="padding-left: 40px;">extracting one or more criteria and one or more parameters from one or more keywords contained in the one or more recognized words or phrases . . . ;</p> <p style="padding-left: 40px;">inferring one or more further criteria and one or more further parameters associated with the request using a dynamic set of prior probabilities or fuzzy possibilities; and</p> <p>transforming the one or more extracted criteria, the one or more extracted parameters, the one or more inferred criteria, and the one or more inferred parameters into one or more tokens, wherein the one or more tokens include all the required values and one or more of the optional values associated with formulating the request in the grammar used by the domain agent”</p>
<b>Amazon Construction</b>	<p>Subject to 35 U.S.C. § 112, ¶ 6.</p> <p><b>Functions:</b> entire limitation, except “at a parser coupled to the processing device” and “at the parser”</p> <p><b>Structure:</b> None disclosed. Indefinite.</p>

Claim 5 of the 006 patent is a method claim with a nested “parser coupled to the processing device.” The claimed “parser” does not connote a structure to a POSITA, and the claim describes it solely by reference to two recited functions: (1) “parsing information relating to the utterance to determine a meaning associated with the utterance and a context associated with the request contained in the utterance . . . ,” and (2) “formulating the request contained in the utterance in accordance with a grammar used by a domain agent associated with the determined context,” which includes several sub-functions. (Johnson Decl. ¶¶ 120-29.)

The specification does not disclose an algorithm sufficient under § 112, ¶ 6 for the

“parsing” function. The same analysis applies here as for the “parsing” function identified for claims 1 and 10 of the 006 patent. *See supra* Section II.G.2.c.

The specification also does not disclose an algorithm sufficient under § 112, ¶ 6 for the “formulating” function or its sub-functions. The specification only discloses that to formulate the request, the parser “transforms” extracted criteria, extracted parameters, inferred criteria, and inferred parameters into one or more tokens, which somehow “include all the required values and one or more of the optional values associated with formulating the request in the grammar used by the domain agent.” (006, cl. 5; Johnson Decl. ¶ 140.) Nothing in the specification describes the structure of the tokens, how this transformation occurs, or how the tokens may be “associated with formulating the request in the grammar used by the domain agent.” (Johnson Decl. ¶¶ 140-42.) Nor does it explain how to determine, extract, or infer any of the criteria, parameters, or values are used in formulating the request. (*Id.* ¶ 142 (citing 006 patent, 18:13-16, 24:63-65 (disclosing no algorithm for “determining required or optional values”); 18:19-25, 25:5-10 (disclosing no algorithm for extracting criteria or parameters from keywords); 18:17-18, 24:65-67 (disclosing no algorithm for inferring one or more further criteria)).)

Accordingly, the specification does nothing more than describe abstract “inputs”—extracted and inferred criteria and parameters—that are used in tokens without a specific algorithm teaching how any specific values, criteria, or parameters could be obtained or used to achieve that result. *See, e.g., Aristocrat Techs.*, 521 F.3d at 1335; *Ibormeith*, 732 F.3d at 1381-82. That is insufficient under § 112, ¶ 6, and the claim term is invalid.

### CONCLUSION

For the foregoing reasons, the Court should adopt Amazon’s proposed constructions and indefiniteness positions.

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